



The first record of *Clubiona saxatilis* C.L. Koch, 1867 (Araneae: Clubionidae) in Poland

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Abstract: *Clubiona saxatilis* C.L. Koch was observed in the Stołowe Mountains (south-western Poland). Its distribution in Europe is here discussed and the morphological features of the males of *C. saxatilis* C.L. Koch and *C. alpicola* Kulczyński are illustrated.

Key words: *Clubiona saxatilis*, Poland, spiders, first record, the Stołowe Mountains

INTRODUCTION

Clubiona saxatilis C.L. Koch, 1867 is a rare spider species occurring in Central Europe (Nentwig et al. 2015). So far, numerous localities of this species were recorded in Bulgaria (Deltshev & Blagoev 1997, Blagoev et al. 2002), Slovakia (Gajdoš et al. 1999), the Czech Republic (Buchar & Růžička 2002), Germany (Muster 2002, Staudt 2015), Serbia (Ćurčić et al. 2003), Romania (Nentwig et al. 2015, Van Helsdingen 2015), France (Van Helsdingen 2015), Montenegro and Italy (Nentwig et al. 2015).

The presence of *C. saxatilis* was uncertain in Poland. Kupryjanowicz (2008) gave the general information that *C. saxatilis* occurred in Poland. At the time, he relied his opinion on the preliminary, not published and wrong identification by the first author (RR). This confusion resulted from the fact that RR had found in Lublin the specimen which finally turned out to be a teratogenic female of *Clubiona terrestris* Westring, with a distorted epigynum. In this paper we present and discuss the first record of *C. saxatilis* in Poland.

EXAMINED MATERIAL

Clubiona saxatilis C.L. KOCH, 1867:

Szczeliniec Wielki Massif, Stołowe Mts, ca. 50°29'03"N, 16°20'27"E [UTM grid: WR 99], on the sunny rock wall, c. 910 m a.s.l.; 2 Aug 2006, 1♂; leg. J. Stachowicz, det. R. Rozwałka.

Clubiona alpicola Kulczyński, 1882 as comparative material:

Mały Śnieżny Kocioł (Small Snowy Cirque), Karkonosze Mts, rocky debris; 10 Jun 1990, 1♂, 3♀♀; leg. et det. M. Woźny;

Ciemniak Massif, Tatra Mts, under stone of rocky debris, 2080–2090 m a.s.l.; 1 Aug 2013, 1♂, 9♀♀, 2 juv.; leg. et det. R. Rozwałka;

Babia Góra Mts, under stone of rocky debris, ca. 1640–1650 m a.s.l.; 19 Aug 2014, 2♂♂, 6♀♀, 3 juv.; leg. et det. R. Rozwałka.

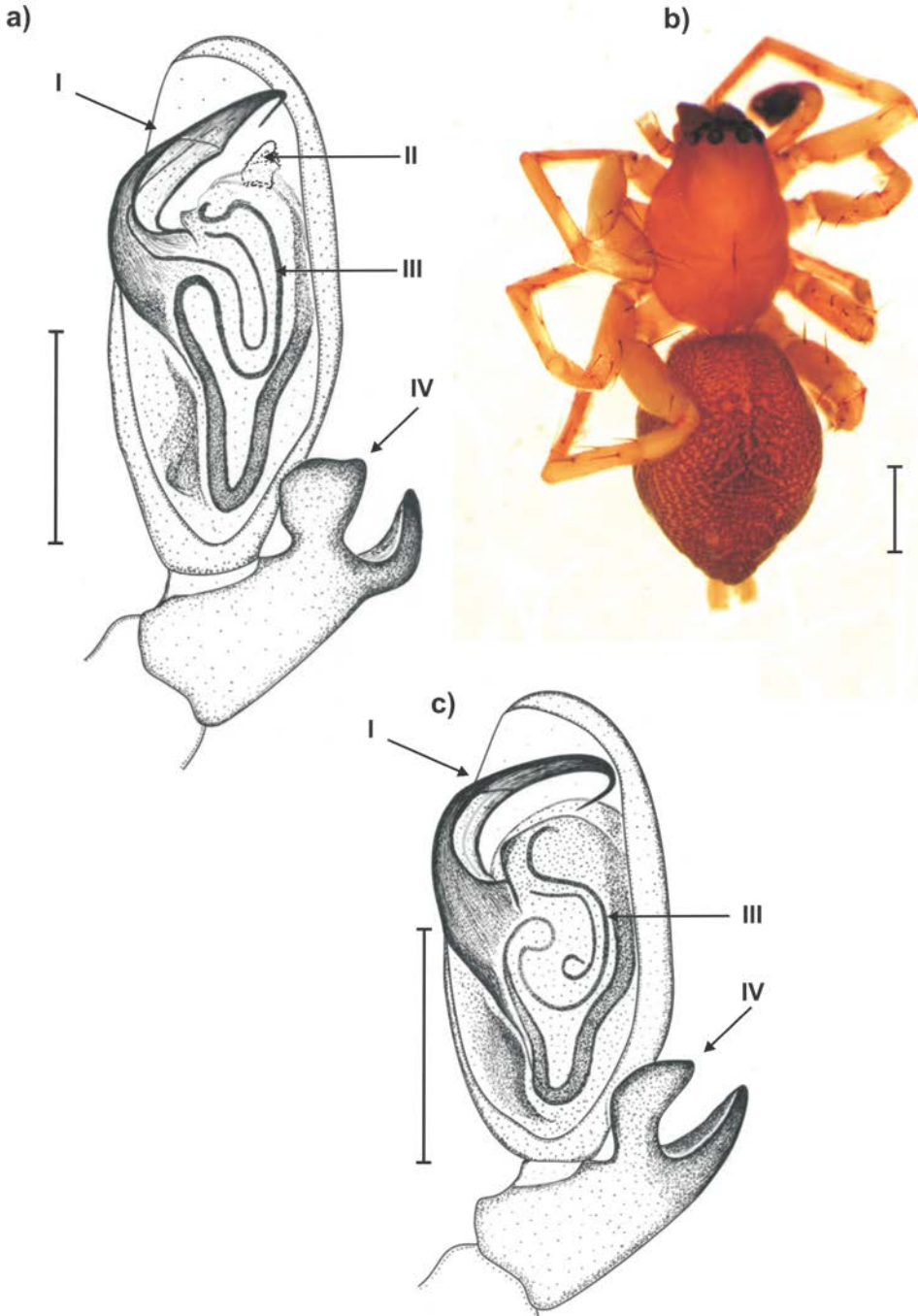


Figure 1. *Clubiona alpicola* and *Clubiona saxatilis*: a – male palp of *Clubiona alpicola*; b – total view of *Clubiona saxatilis*; c – male palp of *C. saxatilis*. I – embolium, II – membranous velum, III – sperm duct, IV – tibial apophysis. Scale bar of figure 1a, 1c: 0.5 mm, figure 1b: 1 mm.

RESULTS

We compared the key features of the males of *C. alpicola* and *C. saxatilis*. Based on the studied material, we have found six morphological differences between these two species (Table 1, Fig. 1).

Table 1. Morphological difference between the males of *Clubiona alpicola* and *Clubiona saxatilis*.

<i>C. alpicola</i>	<i>C. saxatilis</i>
total length: 5.5–6.7 _(n=4) mm	total length: 5.1 mm (Fig. 1b)
palp length: 1.10–1.25 mm (Fig. 1a)	palp length: 0.90 mm (Fig. 1c)
embolium set at an angle of ca 40–50° to the longitudinal axis of the palp (Fig. 1-aI)	embolium arranged almost perpendicularly to the longitudinal axis of the palp (Fig. 1-cI)
membranous velum is present (Fig. 1-aII)	membranous velum is absent (Fig. 1-c)
arrangement of sperm duct as in figure 1-aIII	arrangement of sperm duct as in figure 1-cIII
shape of tibial apophysis, particularly ventral branch (Fig. 1-aIV)	shape of tibial apophysis, particularly ventral branch (Fig. 1-cIV)

The other diagnostic features for both sexes of *C. saxatilis* was given in the following publications: Miller (1943, 1947, 1971: as *Clubiona dvoraki*), Thaler (1981: as *C. dvoraki*), Heimer & Nentwig (1991: as *C. dvoraki*) and Nentwig et al. (2015: as *C. saxatilis*).

DISCUSSION

Clubiona saxatilis is rarely found species – in Europe, given from France, Germany, Austria, Italy, Romania, Bulgaria and Serbia (Nentwig et al. 2015). In Central Europe, all known localities of *C. saxatilis* were in the south of the Carpathians and Sudetes. The newly found site in Stolowe Mountains is the farthest north away ca 150 km from the nearest locations on Moravia (Mohelno) in the Czech Republic (Fig. 2) (Miller 1943, 1947).

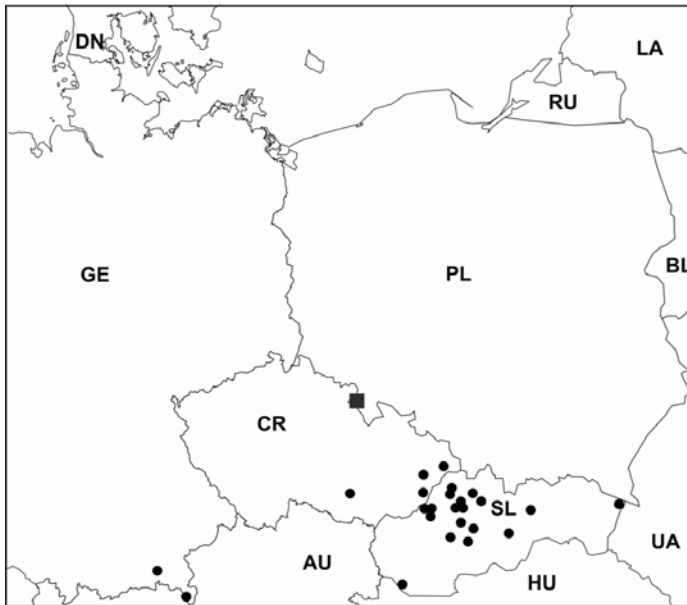


Figure 2. Distribution of *Clubiona saxatilis* in Germany, the Czech Republic, the Slovak Republic (dots) and Poland (square).

Clubiona saxatilis is a stenothermal spider living in lower mountains and foothills in Central Europe (Thaler 1981). It inhabits low green vegetation and areas under stones in the piedmont xerothermic stony grass (Miller 1943, 1947, Buchar & Růžička 2002), stony rubbles, mountain meadows and pastures. Furthermore it was caught in the undergrowth of mountainous pine forests (Thaler 1981, Franc 2002, Muster 2002).

The vertical distribution of *C. saxatilis* is in the range from 300 to 1400 m a.s.l. (Buchar & Růžička 2002, Thaler 1981). The vertical reach of *C. saxatilis* is partly consistent with *Clubiona alpicola* Kulczyński, 1882, which is morphologically similar and inhabits sunny rock rubbles situated from the level of dwarf mountain pine through mountain pastures up to nearly for summits (c.a. 1100–2600 m a.s.l.) in the Alps, Karkonosze, Babia Góra and Tatra Mountains (Kulczyński 1881, 1882, Prószyński & Staręga 1971, Thaler 1981, Woźny et al. 1988, Nentwig et al. 2015, R. Rozwałka, pers. obs.).

In most countries, *Clubiona saxatilis* was known only from a few localities and it was considered rare (Buchar & Růžička 2002, Thaler 1981, Nentwig et al. 2015). Due to its occasional occurrence, *C. saxatilis* is considered an endangered species (Růžička 2005). In Slovakia, *C. saxatilis* is listed among the endangered species, although it was placed into the low-risk group (Gajdoš & Svatoň 1994).

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STRESZCZENIE

[Pierwsze stwierdzenie *Clubiona saxatilis* C.L. Koch, 1867 (Araneae: Clubionidae) w Polsce]

W pracy przedstawiono informację o pierwszym stanowisku w Polsce rzadkiego gatunku pająka związanego z obszarem gór i pogórzy – *Clubiona saxatilis* C.L. Koch. Odkryte stanowisko *C. saxatilis* na terenie skalnych labiryntów w masywie Szczelińca w Górach Stołowych jest najdalej na północ wysuniętym stanowiskiem tego gatunku. W pracy porównano i zilustrowano cechy morfologiczne samców *C. saxatilis* i *C. alpicola* oraz omówiono występowanie gatunku w Europie.

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